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TOOTHBRUSH WITH DECORATIVE PROTECTIVE COVERBACKGROUND OF THE INVENTION

It would be desirable to provide a toothbrush with some form of structure which could prevent the cleaning elements, such as bristles, from inadvertent contact with various surfaces. Such structure would enhance the cleanliness of the elements. It would be desirable to prevent the cleaning elements from having their shape distorted by preventing the cleaning elements pressing against a surface such as a sink top during periods of non-use. It is known to provide caps over the head of a toothbrush to attempt to accomplish such results. Generally such caps envelope the entire toothbrush head which creates a chamber where contamination and bacteria may collect.

It is further desirable to provide a toothbrush which would be attractive to potential consumers particularly children to encourage use of the toothbrush.

It would also be desirable to have means for facilitating multiple decorative protective covers for such toothbrushes. In particular, it would be helpful to have multiple decorative covers that could be collected or assembled to spark interest in the toothbrush by users, particularly children. Means for interchangeable use of these several decorative covers to maintain this interest in the toothbrush, and brushing, is also desirable.

SUMMARY OF THE INVENTION

An object of this invention is to provide a decorative cover for a toothbrush wherein the cover is confined solely to the cleaning element side of the toothbrush head.

5 A further object of this invention is to provide such a cover which may be ornamental in appearance to attract consumers such as children.

In accordance with this invention a cover made of a shape retaining material is mounted at the front face of the 10 toothbrush head which is the face from which the cleaning elements extend outwardly. The cover is located so as not to be in pressing contact with the cleaning elements and is preferably spaced from the outer ends of the cleaning elements. The cover is of a size to cover the entire area of 15 the outer ends of the cleaning elements, but preferably spaced from the cleaning elements to permit unconfined circulation of air around and through the bristles.

The cover may be of generally planar shape without any inwardly extending walls or flanges and may be connected to 20 the head in any suitable manner such as by one or more posts on the cover extending into corresponding holes in the head. In other practices of the invention the cover could have one or more depending walls or flanges which could be used as the detachable mounting structure to secure the cover to the 25 toothbrush head. In a preferred practice of the invention the outer surface of the cover has ornamentation such as a figurine to enhance the attractability of the toothbrush when the cover is detachably mounted in place.

Removable attachment of the cover to the toothbrush may also be accomplished by a cover having a length greater than the length of the toothbrush head. In such an embodiment, the cover may be attached to the toothbrush by a slip or

5 snap fit of U-shaped cover flanges extending along the longitudinal length of the toothbrush. The internal clearance between these flanges is dimensioned so that the flanges may be easily pressed over the body of the toothbrush head and/or handle to secure the cover on the toothbrush. Conversely,

10 the cover is easily removed from the toothbrush by simply pulling on the cover. As the cover is pulled off, the flexible flanges expand to allow easy removal of the cover, especially by children.

The cover preferably includes a receptacle on its out-side decorative face. In one embodiment, a female connector is included in the cover to facilitate placement of interchangeable decorative overlays over all or part of the cover. The decorative overlays have connectors complementing that on the cover so that the overlay may be easily attached to or released from the cover. A male connector on the overlay can be used to facilitate this removable interaction with a female connector on the cover. Other connectors for joining the overlay to the cover are contemplated by this invention, for example, a ball and socket connector.

20 The decorative overlays preferably have a shape, color and theme that complement the shape, color and theme of the cover.

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It is an object of this invention to provide a toothbrush with multiple covers and/or overlays that can be mixed or matched to visually engage youthful toothbrush users. The overlays can be collected and interchanged on a periodic, even daily, basis to heighten a child's interest in using the toothbrush. The shape, color and theme of the cover and/or overlays attract the eye and interest of potential users, particularly children.

The shape, color and theme of the cover or overlay can also be complemented with a decorative front panel or escutcheon on the surface of the toothbrush facing the user. This escutcheon can also be collected and interchanged, like the covers and overlays, to promote use of the toothbrush and otherwise enhance its appearance.

15 BRIEF DESCRIPTION OF THE DRAWINGS:

Figure 1 is a side elevational view of a toothbrush incorporating one form of cover in accordance with this invention;

20 Figure 2 is a front elevational view of the toothbrush shown in Figure 1;

Figure 3 is an end elevational view of the toothbrush shown in Figures 1-2;

25 Figure 4 is a side elevational view partly in section of an alternative toothbrush in accordance with this invention;

Figure 5 is an end elevational view partly in section of the toothbrush shown in Figure 4;

Figure 6 is a side elevational view partly in section of yet another toothbrush in accordance with this invention;

Figure 7 is an end elevational view partly in section of the toothbrush shown in Figures 6;

5 Figure 8 is a side elevational view of yet another toothbrush in accordance with this invention;

Figure 9 is a side elevational view of a toothbrush incorporating a complementary decorative cover and overlay in accordance with this invention;

10 Figure 10 is a front elevational view of a powered toothbrush incorporating the complementary decorative cover, overlay and front panel in accordance with this invention;

Figure 11 is fragmental front elevational view of the decorative cover of this invention without the decorative
15 overlay in place;

Figure 12 is a fragmental exploded view of toothbrush in accordance with this invention showing the decorative cover and decorative overlay with, respectively, female and male connectors.

20 Figure 13 is a side elevational view of the toothbrush in accordance with this invention showing a decorative cover and overlay with another form of connector, i.e., ball and socket.

Figure 14 is a side elevational of the toothbrush in accordance with this invention showing another connector, ball and detent, for releasably attaching the overlay to the cover.

DETAILED DESCRIPTION

The present invention in general includes a cover which would be detachably mounted to the head of a toothbrush at the front face of the toothbrush which carries the cleaning elements such as bristles. The cover would be located outwardly of the cleaning elements and preferably be spaced from the cleaning elements so as not to apply pressure against the cleaning elements when the cover is mounted in place. Preferably the cover is mounted in such a manner that air flow is readily permitted through the cleaning elements. This free circulation of air can be accomplished using posts or other releasable connectors for attaching the cover to the toothbrush head. In another embodiment, one or more walls or flanges interact with the side of the toothbrush head to hold the cover in position so that air may flow through the cover. Those flanges may also have perforations to permit the flow of air.

In another embodiment of this invention, the cover contains flexible flanges which extend from the visible face of the cover a distance sufficient to engage the head and/or handle of the toothbrush. The flanges are flexible enough to attach the cover to the toothbrush with relatively little pressure, which is particularly useful with youthful users. By extending the flanges for some distance along the longitudinal axis of the toothbrush body and/or head, sufficient frictional surface exists between flanges and toothbrush to hold the cover in place. Conversely, the flexibility of

these flanges, and minimal friction between cover and toothbrush body permit easy removal of the cover before use.

In a preferred practice of this invention the outer surface of the cover has ornamentation to appeal to users, particularly children. That ornamentation can be formed in the cover as a raised or indented figure, for example as shown in Figures 1-3. Alternatively, the cover itself can be created in three-dimensional detail to represent a real or mythical character as shown in Figures 9-14. The cover can also form the background for a decorative overlay attached to the cover as illustrated in Figures 9-14.

A decorative escutcheon on the front of the toothbrush which complements the visual theme of cover and overlay is also contemplated. Preferably, this escutcheon would be removable so that different escutcheons could be used as visual complements to a variety of covers and overlays available for use on the toothbrush.

Figures 1-3 show a manual toothbrush 10 in accordance with one embodiment of this invention. As shown therein toothbrush 10 includes a handle 12 mounted at one end to a head 14. Head 14 has a front face 16 and a rear face 18. The front face and rear face are connected together by intermediate side walls 20,20 and end wall 22. A plurality of cleaning elements 24, such as bristles, are mounted to and extend outwardly from front face 16.

In accordance with this invention a shield or cover 26 is detachably mounted to head 14 outwardly of cleaning elements 24. The cover may be located where the outer ends of

cleaning elements 24 barely make contact with the inner surface of cover 26 so that the cover does not press against the cleaning elements. Preferably, however, the inner surface of cover 26 is located spaced from the outer ends of 5 cleaning elements 24 as shown in Figures 1 and 3. As illustrated, the cover extends beyond the outer periphery of the cleaning elements so that no cleaning elements are disposed outwardly of the cover. Thus, even if the toothbrush is placed on its side, none of the cleaning elements would contact the support surface such as the sink top.

In a preferred practice of this invention the outer surface of cover 26 includes some form of ornamentation 28 such as a figurine which would be attractive to users, particularly children. As illustrated in Figures 1-3, that ornamentation comprises a slightly raised figurine 28 atop cover 26 which is designed to have appeal to young children. That figurine 28 could also be portrayed as a depression within cover 26. In Figures 9-14, the cover 26 forms an ornamental background for the decorative overlay 52 attached 15 thereto. However, the cover 26 in the embodiment shown in Figures 9-11 could contain sufficient child-attention-getting ornamentation of its own so that the overlay 52 would not be necessary.

Cover 26 is preferably made of a shape retaining material to assure that it will not come in contact with the 25 cleaning elements. Any suitable shape retaining material such as a stiff, hard plastic or elastomer may be used. Cover 26 could be transparent, translucent or opaque. The

thickness and shape of cover 26 are not critical and can be adjusted for cost considerations.

Cover 26 provides protection from contact of cleaning elements with some surface containing harmful bacteria or 5 germs, such as a kitchen or bath countertop. In addition, cover 26 acts as a barrier to minimize contamination collecting on the cleaning elements. Where the cover 26 is simply of generally planar shape without any depending walls or flanges there is complete air flow through and across the 10 cleaning elements which also is beneficial in preventing accumulation of bacteria or other contaminants.

Cover 26 in all of its embodiments, particularly those illustrated in Figures 9-14, helps to create an attractive appearance that draws attention. It provides a distinctive 15 attraction to potential customers shopping for a new toothbrush. Once purchased, that attraction reminds persons that the toothbrush is there and should be used. In addition to acting as a reminder, the attractive features of cover 26 and/or decorative overlay 52 shown in Figures 9-14 20 draw children to the brush and initiate a fun atmosphere in which the brushing will take place. In addition, parents can use the features of cover 26 and/or decorate overlay 52 to start a conversation with children which can be steered toward the importance of daily tooth brushing. With the use 25 of multiple decorative overlays and/or covers contemplated by this invention, the conversation never goes stale.

These attention getting features of the toothbrush 10 can be further enhanced by use of decorative escutcheon 50

generally overlying the toothbrush handle 12. The escutcheon 50 preferably has decorative features which complement those of cover 26 and/or overlay 52.

Cover 26 can be detachably secured to head 14 in any suitable manner. As shown in Figures 1 and 3 the securing structure may comprise one or more pegs or posts 30 extending outwardly from the lower surface of cover 26. Each peg or post is received in a hole or detent 32 in the front face 16 of head 14. Where a single peg or post is used the peg or post would preferably be located in the axial and transverse center of cover 26 to fit in a correspondingly located hole in the front face 16 of head 14. Where two pegs or posts are used, such as illustrated in Figure 1, the pegs or posts would be preferably equally spaced apart from the ends of cover 26 and fit in correspondingly located detents 32. Where three or more pegs or posts are used the location would be selected to take into account the ease in mounting and detaching cover 26 to head 14. Thus, the pegs or posts could be located near the side walls 20 and/or end wall 22 of head 14 or at some intermediate location(s) on face 16.

Figures 4-5 illustrate a variation of the invention wherein the cover 26A has a pair of flanges or side walls 34 extending away from the inner surface of cover 26A. This results in a generally U-shaped structure. The flanges 34 terminate in bent ends 36 as shown in Figure 5 for fitting in grooves 38 in the side walls 20,20 of head 14. Figure 4 illustrates an end wall or flange 40 that can also be provided on cover 26A. Cover 26A is open, however, at its end

disposed toward the handle 12 which thus permits air to circulate through the cleaning elements.

Figure 6 shows a variation where cover 26B includes a pair of walls or flanges 34, but is open at both ends to 5 create an open tunnel. This embodiment is preferred over the embodiment of Figures 4-5 because the open ends more readily enhance the circulation of air through the cleaning elements.

Figure 7 illustrates a variation in the mounting of 10 cover 26B as compared with that of cover 26A shown in Figure 5. As shown in Figure 7 each flange 34 is provided with spaced projections or balls 42 which fit in spaced sockets 44 in each side wall 20 of the head. The walls or flanges 34 are preferably made of material which is sufficiently 15 springy or resilient to permit the bent ends 36 or balls 42 to snap in the corresponding grooves or sockets.

Figure 8 shows a further variation wherein the cover 26C has side walls or flanges 34 and an end wall 40 as in Figure 4, but also includes a further end wall 46 located on 20 the side of the cover near the handle. In this embodiment a plurality of vent holes or perforations 48 is provided through the various surfaces of the cover, such as the end walls or flanges 34 to permit air circulation to and through 25 the cleaning elements. Such perforations could also be provided for any of the other covers.

As is apparent from the drawings a significant difference of the various covers as compared to conventionally used caps is that the covers do not extend beyond the side

walls of the head 14. In other words, the cover does not extend completely to the rear face 18 of head 14. In a preferred practice of the invention the covers also differ from conventional caps in the enhanced air flow or air circulation of the cleaning elements.

Where the cover includes side walls or flanges the mounting structure may in general be considered as including projections which engage complementary mounting structure in the head in the form of openings. Thus, such projections could be the inwardly turned ends of the flanges or could be balls or other projections which engage grooves or spaced holes or sockets in the head. The walls or flanges of the cover are preferably located at the outer periphery of the cover. The invention, however, could be practiced where such walls or flanges are located inwardly of the periphery so that the main portion of the cover extends outwardly beyond one or more of such walls or flanges.

In practice the cover would be mounted on the head 14 of the toothbrush during periods of non-use. When mounted on the toothbrush the cover would function to protect the cleaning elements by providing some form of ornamentation. The appearance of the toothbrush would thus be enhanced to make its use more desirable, particularly for children.

When it is intended to use the toothbrush the cover would be detached by removing the locking members of the shield such as the posts, bent ends or balls from the complementary locking members on the head such as the holes, grooves or sockets so that the cover could then be placed to the side

and the toothbrush would be used in a normal manner. After use of the toothbrush the cover would be reattached by engaging its locking members with the complementary locking members of the head.

5 Figure 9 illustrates an embodiment of this invention in which power toothbrush 10A includes a head 14 on which is mounted a cover 26. The toothbrush illustrated in Figs. 9-10 is a powered toothbrush but the cover 26 could also be used on a manual toothbrush. A decorative overlay 52 may be
10 attached to cover 26 to give a full three-dimensional effect to the actual or mythical character or scene being portrayed.

The cover is removably attached to toothbrush 10 or 10A by flanges 54 and 56 which extend away from the face of
15 cover 26. The open distance between these flanges is designed to frictionally touch the edges of handle 12 and/or head 14 of toothbrush 10 and thereby hold the cover 26 in place on the toothbrush body. The flanges 54, 56, and preferably the whole cover 26, are formed of a relatively flexible material. That material allows the flanges 54, 56 to
20 snap fit over the head 14 and/or handle 12 of toothbrush 10 to hold it in place. That flexibility also permits ready removal of cover 26 from toothbrush 10 or 10A with just a small amount of force pulling at the cover.

25 In one embodiment, illustrated in Figures 9-12, the decorative overlay 52 is connected to cover 26 through the mating relationship of connectors 58 and 60. As best illustrated in Figure 12, the decorative overlay 52 contains a

male connector 60 which mates with a female connector 58 on the face of cover 26. These connectors are dimensioned to allow easy addition and removal of the decorative overlay 52, which is particularly helpful where children are using 5 the toothbrush 10A. Other connectors are illustrated in Figures 13 and 14. In Figure 13, a ball 64 formed as part of overlay 52 is releasably inserted into socket 66 formed in cover 26. In Figure 14, a hemispherical protrusion or ball 68 on the insides of overlay 52 fit into a mating depression 70 or socket in the face of cover 26.

10 Decorative escutcheon 50 may similarly be exchanged for other escutcheons using like connectors. Alternatively, escutcheon 50 can be removably attached to the handle portion 12 of toothbrush 10 with the use of flexible flanges similar 15 to those described above in conjunction with cover 26.

In a preferred practice of this invention the cleaning elements are bristles which could be of any known form. The cleaning elements could also include elastomeric members such as massage elements in addition to, or instead of, 20 bristles.

Figures 1-7 illustrate the toothbrush 10 to be a manual toothbrush. Figures 8-12, however, shows the practice of the invention wherein the toothbrush 10A is a power or electric toothbrush which would have one or more movable sections on the head 14. The electric toothbrush 10A would have a hollow handle 12 for housing the batteries and motor of the toothbrush. The motor would drive a shaft which would extend from the handle into the head so as to move the 25

one or more movable sections. Operation of the power drive could be controlled by switch 62.

Any suitable form of movement of the section(s) could be utilized such as oscillating rotation, continuous rotation, linear longitudinal oscillation, linear transverse oscillation and a rocking back and forth about the longitudinal axis of the head. Combinations of such movements could also be used.